

## 5. Kevin

**Program Name: Kevin.java**

**Input File: kevin.dat**

Kevin is an Irish exchange student. He is a serious runner and keeps a log to track his performance, recording each run with the date, the distance in kilometers, and the time in hours, minutes and seconds. He has been learning how to use a spreadsheet to generate some useful summary information but is not very confident in his results. He has asked your UIL programming team to write a program to verify his spreadsheet results.

For each log entry, Kevin computes the average pace as minutes per kilometers which is just time divided by distance. He tabulates the overall total distance, total time spent running, and the daily averages of both. He also keeps up with his overall longest distance and time, and his run with overall fastest pace in minutes per kilometer. He wants to also compute the average distance and pace for all short runs ( $5.0 \text{ km} \leq \text{distance} < 10 \text{ km}$ ) and the same for all medium runs ( $10 \text{ km} \leq \text{distance} < \text{half a marathon}$ ) and for all long runs ( $\geq \text{half a marathon}$ ). He has not yet run a full marathon which is 42.195 km but has plans to do so in the future.

Kevin would also like to obtain some statistics for his best 7-day running period, that is, **seven consecutive days of running with a total distance greater than any other seven consecutive day period**. He wants the total distance and time, average distance and time, and average pace across 7 consecutive days. He wants to know the first and last date of that 7-day period.

**Input:** A list of log entries of unknown quantity, but fewer than 500. Each line will contain a date in the format m/d, a distance in kilometers which will be  $< 50.00$ , and a time in the format h:m:s. The items will be separated by whitespace. There is only one entry for each day he runs, but he does not run every day. He makes no entries for non-running days. Log entries are in chronological order from oldest to newest. Assume February dates are always in a leap year, like the year 2020, and dates may wrap from one year to next. There will be only one February in the test data. A 7-day period with consecutive days of running will exist in each test data set. Test data will exist for short, medium, and long categories.

**Output:** Overall total distance, overall total time, and daily averages for both. Longest distance, longest time, and fastest pace of all runs. Average distance and pace for short, medium, and long runs. Start and stop dates of best-distance 7-day stretch with totals and averages for both distance and time and the average pace for that period. Format all items as shown in sample output. Single-digit seconds must always have leading 0 and, when hours are displayed, single-digit minutes must have a leading 0. Results must be worded and formatted as shown in sample.

**Sample input and output are on next page...**

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### Kevin Sample input:

2/2	9.74	0:29:37
2/3	24.93	1:32:14
2/4	24.45	1:08:13
2/5	8.58	0:24:48
2/6	7.66	0:28:11
2/7	14.4	0:47:57
2/8	11.04	0:31:21
2/10	29.88	1:19:47
2/11	5.39	0:19:47
2/12	8.25	0:23:56
2/13	6.75	0:23:50
2/14	20.73	1:10:04
2/14	22.06	1:08:36
2/15	5.63	0:17:20
2/16	20.48	1:07:23
2/17	24.32	1:26:49
2/18	15.56	0:52:17
2/19	27.98	1:25:20
2/20	26.74	1:11:08
2/22	5.74	0:16:39
2/23	13.47	0:39:04
2/24	16.42	0:45:49
2/25	7.57	0:26:39
2/26	16.78	0:45:18
2/27	13.00	0:36:16
2/28	22.06	1:07:43
2/29	6.81	0:25:04
3/1	7.66	0:27:02
3/2	26.95	1:32:59
3/5	20.86	0:56:32
3/6	8.39	0:21:54
3/7	29.45	1:50:26
3/8	23.02	1:10:26
3/9	15.32	0:41:31
3/10	25.38	1:11:04
3/11	9.81	0:35:43
3/12	18.11	0:47:16
3/13	26.15	1:07:44
3/14	26.91	1:19:07
3/15	14.49	0:51:26
3/16	5.71	0:16:10
3/17	7.36	0:26:39
3/18	13.05	0:33:56
3/19	13.18	0:37:18
3/20	27.81	1:23:42

### Sample output:

Total distance = 736.03  
Total time = 37:42:05  
Average distance = 16.36  
Average time = 0:50:16  
Longest distance = 29.88  
Longest time = 1:50:26  
Fastest pace = 2:35  
Short run average distance = 7.40  
Short run average pace = 3:16  
Medium run average distance = 15.79  
Medium run average pace = 2:58  
Long run average distance = 25.87  
Long run average pace = 3:05  
Best 7-day streak 3/7 - 3/13  
Total distance = 147.24  
Total time = 7:24:10  
Average distance = 21.03  
Average time = 1:03:27  
Average pace = 3:01